ANALISIS FORMASI LANGAP SEBAGAI FORMASI PEMBAWA BATUBARA DAN KAJIAN KUALITAS BATUBARA BERDASARKAN PENGAMATAN GEOFISIKA *WELL LOGGING* DI DAERAH LANGAP, KECAMATAN MALINAU SELATAN KABUPATEN MALINAU, PROPINSI KALIMANTAN TIMUR

Jery Willyam (115.080.088), Program Studi Teknik Geofisika

Universitas Pembangunan Nasional "Veteran" Yogyakarta

ABSTRAK

Telah dilakukan penelitian lapisan pembawa batubara pada Formasi Langap dengan menggunakan metode geofisika *well logging*. Penelitian dilakukan di Kecamatan Malinau Selatan, Kabupaten Malinau, Propinsi Kalimantan Timur .

Penelitian menggunakan data *well logging* yaitu *gamma ray log,* dan *density log* serta hasil uji laboratorium dari hasil pemboran sebanyak tiga titik bor. Penelitian dilakukan dengan menganalisa defleksi kurva *well logging* serta menghitung harga indeks *gamma ray*, volume *shale,* kadar abu dan nilai kalori untuk menganalisa kualitas batubara. Pada penelitian ini juga dilakukan rekonsiliasi antara data bor (berupa Cutting) dan *well logging*, yaitu pengumpulan dan pencocokan antara kedua data tersebut.

Formasi Langap memiliki karekteristik lapisan pembawa batubara berupa satuan batulempung dan batulempung pasiran. Satuan batulempung memiliki karakteristik nilai volume shale berkisar antara (0.102 – 0.996) % dan nilai densitas berkisar antara (1.71 – 1.92) gr/cc. Nilai volume shale batupasir lempungan berkisar antara (0.046 – 0.449) % dan nilai densitas (1.70 – 1.96) gr/cc.

Berdasarkan hasil analisis lapisan batubara secara keseluruhan berjumlah 2 seam. Nilai volume shale karakteristik batubara secara verikal sangat bervariasi berkisar antara (0.000 – 0.195) %. Nilai density log lapisan batubara menunjukkan harga yang bervariasi terhadap kedalaman berkisar antara (1.64 - 1.73) gr/cc. Ketebalan lapisan batubara berkisar antara (8.50 – 35.78) meter.

Kualitas batubara pada *well logging* menunjukkan nilai kualitas batubara terendah terdapat pada *seam* B dengan nilai kandungan abu 1.48%, kalori 5911 Kcal/Kg, dan nilai volume *shale* 0.0116%. Nilai kualitas batubara yang terdapat pada *seam* A dengan nilai kandungan abu 1.56%, kalori 5941 Kcal/Kg, dan volume *shale* 0.006%, lebih tinggi dibandingkan dengan *seam* B.

Kata kunci : *Well logging, gamma ray log, density log,* lapisan pembawa batubara, lapisan batubara dan kualitas batubara.

ANALYSIS LANGAP FORMATION FORMATION AS CARRIER OF COAL AND COAL QUALITY ASSESSMENT BASED ON OBSERVATIONS GEOPHYSICAL WELL LOGGING IN LANGAP AREA, KECAMATAN SOUTH MALINAU, KABUPATEN MALINAU, EAST KALIMANTAN PROVINCE

Jery Willyam (115 080 088), Geophysical Engineering Program

University of National Development "Veteran" Yogyakarta

ABSTRACT

Coal bearing strata was researched in Tanjung Formation with used well logging geophysics method. Survey area is around in Langap Area , Kecamatan South Malinau, Kabupaten Malinau, East Kalimantan Province.

The research is using well logging data which gamma ray log, density log, caliper log and laboratory test of drilling result of three drilling spot. Research was conducted with analyzed deflection curve of well logging and also calculate an index gamma ray, volume of shale, ash contain and calorie value to analyze the quality from coal. At this research also conducted reconciliation between drilling data and well logging, that is adaptation and gathering between both data.Langap Formation coal carrier layer has characteristics such as claystone and siltstone. Claystone unit has a characteristic value of shale volume ranged between (0.102-0.996)% and density values ranged from (1.71 - 1.92) g / cc. Siltstone shale volume value ranges (0.046-0.449)% and density values (1.70 - 1.96) g / cc.

Based on the analysis of the coal seam as a whole amounted to 2 seam. Characteristics of coal shale volume value varies vertically ranges (0.000-0.195)%. Log density value of coal seam indicates that the price varies with the depth range between (1.64 - 1.73) g / cc. The thickness of the coal seam ranged from (8.50 - 35.78) meters.

Coal quality on well logging showed the lowest values found in the quality of coal seam B with a value of 1.48% ash content, calorie 5911 Kcal / Kg, shale volume and value of 0.0116%. Coal quality values contained in the seam A with 1.56% ash content, calorie 5941 Kcal / Kg, and shale volume 0.006% higher than the seam B.

Keywords: *Well logging, gamma ray log, density log,* coal bearer layer, seams and coal quality.